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THE PLANT DISEASE REPORTER

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ANNUAL CEREAL DISEASE REPORT REQUESTED

The annual report on diseases of cereals for 1925 is now being requested from collaborators. The date when it is due has been set as November 1. This request is made to chief collaborators dealing with cereal diseases in the different states. For the information of our readers the names are given below.

Alabama	L. E. Miles	Agr. Exp. Sta., Auburn
Arizona	R. B. Streets	Univ. of Ariz., Tucson
Arkansas	V. H. Young	Agr. Exp. Sta., Fayetteville
California	W. W. Mackie	Agr. Exp. Sta., Berkeley
Colorado	L. W. Durrell	Agr. Exp. Sta., Ft. Collins
Connecticut	G. P. Clinton	Agr. Exp. Sta., New Haven
Delaware	J. F. Adams	Agr. Exp. Sta., Newark
Florida	G. F. Weber	Agr. Exp. Sta., Gainesville
Georgia	O. C. Boyd	Sta. Bd. Entomol., Thomasville
Idaho	C. W. Hungerford	Agr. Exp. Sta., Moscow
Illinois	L. R. Tehon	Sta. Nat. Hist. Survey, Urbana
Indiana	M. W. Gardner	Agr. Exp. Sta., Lafayette
Iowa	I. E. Melhus	Agr. Exp. Sta., Ames
Kansas	L. E. Melchers	Agr. Exp. Sta., Manhattan
Kentucky	W. D. Valleau	Agr. Exp. Sta., Lexington
Louisiana	C. W. Edgerton	Agr. Exp. Sta., Baton Rouge
Maine	Donald Folsom	Agr. Exp. Sta., Orono
Maryland	C. E. Temple	Agr. Exp. Sta., College Park
Massachusetts	A. V. Osmun	Agr. Exp. Sta., Amherst
Michigan	Ray Nelson	Mich. Agr. Col., E. Lansing
Minnesota	E. C. Stakman	Univ. Farm., St. Paul
Mississippi	D. C. Neal	Agr. Exp. Sta., A. & M. College
Missouri	W. E. Maneval	Agr. Exp. Sta., Columbia
Montana	H. E. Morris	Agr. Exp. Sta., Bozeman
Nebraska	R. W. Goss	Col. Agr., Lincoln

Nevada	P. A. Lehenbauer	Univ. of Nev., Reno
New Hampshire	O. R. Butler	Agr. Exp. Sta., Durham
New Jersey	W. H. Martin	Agr. Exp. Sta., New Brunswick
New Mexico	R. F. Crawford	N. Mex. Agr. Col., State College
New York	Charles Chupp	Cornell Univ., Ithaca
North Carolina	G. W. Fant	Agr. Exp. Sta., Raleigh
North Dakota	Wanda Weniger	Agr. Exp. Sta., Agr. College
Ohio	H. C. Young	Agr. Exp. Sta., Wooster
Oklahoma	F. M. Rolfs	Agr. Exp. Sta., Stillwater
Oregon	H. P. Barss	Agr. Exp. Sta., Corvallis
Pennsylvania	R. S. Kirby	Agr. Exp. Sta., State College
Rhode Island	H. W. Browning	Agr. Exp. Sta., Kingston
South Carolina	C. A. Ludwig	Agr. Exp. Sta., Clemson College
South Dakota	A. T. Evans	Agr. Exp. Sta., Brookings
Texas	J. J. Taubenhaus	Agr. Exp. Sta., College Station
Utah	B. L. Richards	Agr. Exp. Sta., Logan
Vermont	B. F. Lutman	Agr. Exp. Sta., Burlington
Virginia	F. D. Fromme	Agr. Exp. Sta., Blacksburg
Washington	F. D. Heald	Agr. Exp. Sta., Pullman
West Virginia	N. J. Giddings	Agr. Exp. Sta., Morgantown
Wisconsin	R. E. Vaughan	Agr. Exp. Sta., Madison

The report on cereal diseases that will be prepared by these collaborators will consist of three parts (1) the annual report on cards with maps, (2) the estimates of losses and (3) answers to questions on special subjects. Of course collaborators cannot prepare the best reports unless they have the cooperation of other pathologists in their states, therefore, any of our readers who may have information on any of the cereal diseases are asked to send the same as soon as possible to the collaborators in their states.

There are a number of cereal diseases which are of especial interest and concerning which collaborators have been asked to make as complete reports as possible. They are

Wheat - Mosaic; take-all; flag smut
Flax - Pasmo; rust
Rice - All diseases
Corn - Diplodia ear rot
Alfalfa - Nematode; the new bacterial wilt and stem rot caused by Aplanobacter insidiosum
Red clover - Powdery mildew; nematode

Among the special questions that are asked are four which apply to practically all parts of the United States. They are:

1. To what extent is copper carbonate being used in your state this year for bunt control? How much do you estimate was used?

2. What treatment are you recommending for controlling oat smut? How much formaldehyde do you estimate was used for this purpose in 1925?

3. To what extent do your farmers treat barley seed?

4. Is the Maryland method of selecting seed corn, by cutting off the butts and tips of ears being used or tried out in your state? If so, how much and with what success.

LOSSES FROM STEM RUST OF WHEAT IN 1925

The loss from wheat stem rust to winter wheat was practically negligible this year, however, in certain parts of the spring wheat area the loss was serious. The figures in the following table are tentative percentage estimates of losses to all wheat in the thirteen barberry eradication states. These figures were obtained from collaborators and barberry eradication state leaders and are subject to revision as more information is received.

Table 8. Tentative estimated losses from stem rust of wheat in thirteen states, 1925.

State	Percentage
Ohio	1
Indiana	t
Illinois	t
Michigan	t
Wisconsin	3.1
Minnesota	11
Iowa	0.1
North Dakota	4.5
South Dakota	7.4
Nebraska	0
Colorado	0
Wyoming	1.8
Montana	t

Concerning losses in the spring wheat area, the following summary of the situation has recently been given in The Rust Reporter (Vol. 5, Sept. 18, 1925)

issued by the Office of Cereal Investigations.

"The loss in the spring wheat area was largely confined to the bread wheat of South Dakota, North Dakota, and Minnesota. There was practically no loss in the durums. Both excessive heat and stem rust caused kernel shrinkage in parts of this area, and it was often extremely difficult to estimate the proportion of loss due to each factor. Tentative estimates for bread wheat losses in these states are: South Dakota 10 per cent; North Dakota 5 to 10 per cent; and Minnesota 10 to 15 per cent. The state loss is placed lower for North Dakota than for South Dakota and Minnesota because in North Dakota the area in which stem rust caused severe loss was smaller in proportion to the total wheat growing area than was the case in South Dakota or Minnesota.

"In North Dakota the principal loss was in Trail, Stutsman, Barnes, Cass, Ransom, and Richland Counties, which in the aggregate yield less than 20 percent of the state's bread wheat. There was plenty of stem rust present in the northern Red River Valley, but two weeks of cool weather during the latter part of July enabled the wheat to fill out in spite of the rust and thus to escape severe loss. There was no loss in the western half of the state where 50 per cent of the bread wheat is grown.

"In many parts of South Dakota, loss due to excessive heat equaled or exceeded that due to stem rust. Stem rust was most plentiful (45-75 per cent on all plants) in the central counties: Aurora, Jerauld, Beadle, Hand, Hyde, Faulk, and Spink; and in the extreme northeast along Lake Traverse in Roberts County. Unfortunately this area contains about 50 per cent of South Dakota's spring wheat.

"In Minnesota, stem rust was distributed over all of the principal wheat-growing areas but the most severe loss was in the southern Red River Valley in Wilkins, Traverse, and Big Stone Counties. Rust was also noticeably heavier near St. Cloud in Stearns County. The wheat in the southeastern part of the state in general came through with very little shriveling."

CORN SMUT REPORTS (USTILAGO ZEAE)

Maine: Smut is rare enough so that many farmers do not know what it is when they happen to see it. Several specimens have been received this summer, the range extending to the East Central part of the state. (Folsom, Sept. 1)

Connecticut: At least an average season. (Clinton, Sept. 1)

Virginia: An unusual amount this season. (McWhorter)

South Georgia: Common but not serious on sweet corn in gardens during latter part of May and during June. (Boyd, Sept. 1)

Ohio: Over the state as a whole, the amount of smut this year is less than normal. Infection, however, in low lying fields is not difficult to find. On upland fields, however, there is not much smut to be noted. (Thomas, Oct. 1)

Michigan: Average loss less than usual. Sweet corn unusually free from smut this year. (Nelson, Oct. 1)

Wisconsin: About as usual on sweet corn, small amount of loss. (Vaughan, Sept. 1)

Minnesota: Unusually severe in most sections of the state. (Sect. Pl. Path., Oct. 1, 1925)

Kansas: More than in 1924. Worse in the central and western part of the n belt of Kansas. More ears seemed to be affected than usual. (Melchers, Aug. 15)

New Mexico: Extremely common on sweet corn. (Crawford, Sept. 1)

CORN RUST (PUCCINIA SORGHI) PREVALENT IN THE LAKE STATES

Michigan: Causing marked losses in some late plantings of sweet corn. No damage exceeding the average observed in field corn. (Nelson, Oct. 1)

Wisconsin: Present on late plantings, no loss. (Vaughan, Sept. 1)

Minnesota: The worst epidemic of rust that has been observed in several years. Especially severe on Golden Bantam and Squaw Flint. Other varieties of field corn, however, were very severely infected. (Sect. Pl. Path., Oct. 1)

BACTERIAL WILT OF SWEET CORN (BACTERIUM STEWARTII) IN OHIO AND OKLAHOMA

Ohio: Fewer reports than usual have been received regarding this disease upon sweet corn, yet it has been quite conspicuous in some fields of field corn. (Thomas, Sept. 1)

Oklahoma: Observed in two gardens during the past spring. One in eastern Oklahoma, the other in central Oklahoma. About 4% of the plants were killed by this parasite. (Rolfs, Aug. 1)

BROWN SPOT OF SWEET CORN (PHYSODERMA)

L. E. Melchers of Kansas writes on September 1 that traces of Physoderma were observed in some sweet corn planted in Riley County, Kansas. No injury, however, was apparent.

NOTES ON CORN ROOT ROTS

South Georgia: Less serious than in 1924. Most common in fields showing lack sufficient fertilizer. One field in Lowndes

County July 23 showed 90% of plants "down" after a wind storm due to smallroot system severely rotted. (Boyd, Sept. 1)

Ohio: Much less in evidence in Ohio this year than normal. Particularly in fields where attention has been given to maintenance of fertility and the selection of the seed corn, root rot is hard to find. (Thomas, Oct. 1)

Michigan: Apparently worse than usual. Some fields reported 25% loss. (Nelson, Oct. 1)

South Dakota: Small amounts in every field. (Evans, Aug. 15)

Kansas: The various stalk, ear and root troubles associated with various fungous organisms and soil factors are present about the same as usual. The combined damage would probably be 12%. (Melchers, Aug. 15)

CORN EAR ROTS CAUSED BY VARIOUS ORGANISMS

Georgia: Much Diplodia, Fusarium, etc., less common than in 1924, due probably to drouth of May and part of June. Most noticeable during July. Highest percentage infection of ears, 10%, (Thomas County). (Boyd, Sept. 1)

Ohio: Up to the middle of September no infections by Diplodia have been observed. The abundant rains in the latter part of the month are thought to have afforded favorable conditions for the spread of this organism. It is beginning to make its appearance the latter part of the month. (Thomas, Oct. 1)

Oklahoma: As high as 42% of the ears in some fields are injured by Aspergillus niger. The organism invariably starts at the point where insects injure the ear. It is often mistaken for corn smut.

Fusarium sp. causing considerable injury to the plants and destroying considerable grain in the field before harvest. (Rolfs, Aug. 1)

SORGHUM DISEASES IN KANSAS

COPPER CARBONATE TREATMENT SUCCESSFUL AGAINST COVERED KERNEL SMUT

L. E. Melchers, under date of October 1 has sent in the following reports on the sorghum disease situation in Kansas:

Covered kernel smut(Sphacelotheca sorghi)

"Very abundant and the loss will be large. The loss for this state will be at least 10% of the crop. Every time a smutted head occurs, the feeding value of the plant is reduced 50%.

"Experimental work in the Department of Botany and Plant Pathology of the Kansas Agricultural Experiment Station the past three years has definitely proved the value of copper carbonate for the control of sorghum kernel smut. This is an important finding since it has already been largely adopted over the state. The old formaldehyde treatment was not greatly put into use on account of its being a wet treatment. The control by copper carbonate will mean a million dollars saving each year in Kansas."

Kernel smut of milo, feterita, etc. (Sphacelotheca sp.)

"The kernel smut of milo and feterita reported on last year has increased in Kansas. Indications are it is rapidly spreading in the United States where it has been found. There is nothing to prevent its rapid spread since it attacks not only milo, feterita, Hegari, varieties heretofore immune from the ordinary kernel smut S. sorghi, but the rest of the sorghum group as well. It now becomes necessary to treat the seed of all sorghums before planting and has greatly upset experiments in progress on breeding for resistance. Experiments under way indicate that this new strain of smut is effectively controlled by copper carbonate dust."

Head smut (Sorosporium reilianum)

"Never abundant in Kansas, but this year it was less than usual. It is most generally present on Red Amber sorgo if it occurs at all. The loss for the state would only be a trace."

Stripe (Bacterium andropogoni)

"Occurred rather commonly over the state, but the damage was not great. It is less common than some of the other leaf discolorations and "spots."

ALFALFA BACTERIAL WILT AND ROOT ROT (APLANOBACTER INSIDIOSUM) AS REPORTED FROM MISSISSIPPI AND MICHIGAN

Mississippi: The new bacterial disease recently described by F. R. Jones in Phytopath, has been found in a few fields in Washington and Bolivar Counties. Damage in some cases severe. Stunted plants and poor stands. (Neal, Aug. 1)

Michigan: Disease found in three separate fields in Cass County. All fields over three years old. Evidence to indicate spread from infected areas by washings during heavy rain, found in one field. (Kotila, Sept. 30)

STEMROT OF SWEET POTATO (FUSARIUM BATATATIS AND F. HYPEROXYSPORUM)

Delaware: Very heavy infection this season. The initial stand cut 5 to 20% in some fields. Weather very favorable for wilt during June and July. (Adams, Aug. 15)

South Georgia: Common in Porto Rico, Nancy Hall, Big Stem Jersey. No particular survey to ascertain extent of injury over the state. (Boyd, Aug. 15)

Mississippi: Reports of the disease in small amounts have been received from 37 counties. These reports, together with specimens, have been furnished this department by the 30 Plant Board Inspectors in various sections of the state. The disease over the state as a whole is decreasing. (Neal, Aug. 15)

Oklahoma: Reported from eastern part of state. Doing considerable damage. (Rolfs, Aug. 15)

Arkansas: Common and destructive in many parts of state. Considerable dying out at an early stage. (V.H. Young, Aug. 15)

BLACKROT OF SWEET POTATO (SPHAERONEMA FIMBRIATA)

Virginia (Tidewater Section): Of minor importance this season. A few cases observed in seedbeds. No field infections reported to date. (McWhorter, Oct. 1)

Georgia: Less common generally in the field than in 1924. Very severe (10 to 75%) loss of plants in some beds last spring. Big Stem Jersey and Nancy Hall apparently particularly susceptible. Less common than usual on Porto Ricos in field. (Boyd, Aug. 15)

Mississippi: Five reports this season. By using clean seed and sanitary seedbeds this disease is getting less serious each year in the state. (Neal, Aug. 15)

Oklahoma: Very common on the young plants in various parts of the state. (Rolfs, Aug. 15)

Arkansas: Reported fairly common causing dwarfed and dying plants. (V. H. Young, Aug. 15)

New Mexico: Trace, not common. (Crawford, Aug. 15)

FUSARIUM WILT OF TOMATO (FUSARIUM LYCOPERSICI)

Virginia: More extensive than usual and very destructive in some fields. Some complaint has been made of wilt in the Norton variety but I am inclined to think that the seed used was not genuine Norton. (Fromme, Sept. 15)

South Carolina: Present, apparently about as usual. (Ludwig, Sept. 15)

Texas: Very prevalent this year; 8% loss. (Taubenhaus, Sept. 1)

Oklahoma: This organism is more or less plentiful in nearly all sections of the state, and in some it is practically impossible to grow the standard varieties. (Rolfs, Aug. 20)

Arkansas: Prevalent, fewer reports of loss than last year. Possibly due to lateness of crop, much of which was put in very late due to lack of soil moisture. (V. H. Young, Sept. 15)

Ohio: Loss below normal in northern section of the state, yet very severe in the southern part. (Thomas, Sept. 15)

Michigan: Confined to local areas in southermost counties and occurs mostly on light soils. Not important commercially except in greenhouses. (Nelson, Sept. 15)

Wisconsin: Rare; seen in a few gardens near Milwaukee. (Vaughan, Sept. 15)

New Mexico: Less than last year. (Crawford, Sept. 1)

Washington: Reported from Walla Walla May 28. (Heald, Aug. 15)

BLOSSOM END ROT OF TOMATO

Virginia (Tidewater Section): Blossom end rot followed by a large spored Macrosporium was the most severe fruit trouble during the summer. In a few places it ruined the early crop. (McWhorter)

Texas: Very prevalent in east Texas. Three percent loss. (Taubenhaus)

Arkansas: Rather common this year. (V. H. Young, Sept. 15)

Michigan: This disease threatened the commercial crop during the prolonged drought of June and July but abundant rainfall in August and September has reduced this disease to minor importance. (Nelson, Sept. 15)

Wisconsin: Less than usual. (Vaughan, Sept. 15)

Minnesota: None observed since last report - less than usual. (Sect. Pl. Path., Sept. 15)

TOMATO MOSAIC

Connecticut: One report of considerable injury at Bridgeport and one of moderate injury. (Clinton, Sept. 15)

Virginia (Tidewater Section): Typical mosaic was common in the Virginia tomato sections during the past season. (McWhorter, Aug. 1)

Ohio: Infection general and losses severe in southern part of state. (Thomas, Sept. 15)

Michigan: Less than usual. No fields have been observed where mosaic is found in more than a trace of the plants. (Nelson, Sept. 15)

Minnesota: Generally present in usual abundance. (Sect. Pl. Path., Sept. 15)

TOBACCO DISEASES IN CONNECTICUT

G. P. Clinton, under date of September 1, reports as follows concerning Connecticut diseases:

Wildfire (Bacterium tabacum)

"Not bad in early season; but midseason became more prevalent and threatened considerable injury, but in late season did not progress. More than last year."

Angular leafspot (Bacterium angulatum)

"More prevalent than usual; but identity not yet verified by cultures and infection experiments."

Black rootrot (Thielavia basicola)

"Probably more than the average season."

Mosaic

"Seems to be an average amount at least."

Rust

"Average amount; several reports."

Lightning injury

"P. J. Anderson reports five or six cases this year in the Connecticut Valley."

OHIO, WISCONSIN AND MINNESOTA REPORT ON ONION DISEASES

Smut (Urocystis cepulae)

Ohio: Losses from smut decrease from year to year owing to the suc-

cessful use of the formaldehyde drip. There is one large onion growing section in Ohio where smut appeared for the first time this year. (H. C. Young, Sept. 15)

Wisconsin: Widespread but generally controlled by formaldehyde drip. Noticed in rows where formaldehyde drip became clogged. (Vaughan, Sept. 15)

Minnesota: No new infections observed. Known in only one locality. (Sect. Pl. Path., Sept. 15)

Downy mildew (Peronospora schleideni)

Wisconsin: Reported only once this season. Not serious. (Vaughan, Sept. 15)

Ohio: No cases observed. (H. C. Young, Sept. 15)

Pink root (Fusarium malli)

Ohio: Quite generally distributed over the state and in some sections, where rotations have not been practiced, there have been some severe losses. (H. C. Young, Sept. 15)

Macrosporium blight (Macrosporium parasiticum)

Minnesota: Very common on onions in Plainview district causing or being associated with early maturity. (Sect. Pl. Path., Sept.15)

Smudge (Colletotrichum circinans)

Wisconsin: On white sets only. Depends on field infection. Not serious as most Wisconsin onions are red or yellow. (Vaughan, Sept. 15)

Softrot (Bacillus carotovorus)

Minnesota: Abundant in vicinities of St. Paul and Plainview following unusual outbreak of onion maggot. (Sect. Pl. Path., Sept. 15)

Neckrot (Botrytis allii)

Wisconsin: Present, but yield is good. It may cause considerable loss in early storage. (Vaughan, Sept. 15)

Bulbrot (Fusarium cepa)

Minnesota: About 2% in some fields near Plainview. (Sect. Pl. Path., Sept. 15)

Wind damage

Ohio: Onions in one section were seriously damaged by wind, in fact, approximately 5000 acres were lost in the state this year by wind. (H. C. Young, Sept. 15)

PEAR BLIGHT AND BLACK END REPORTED FROM WASHINGTON

Fireblight (Bacillus amylovorus)

"This disease has caused excessive damage in orchards along the Snake River and in the Yakima Valley. It has been prevalent in the Walla Walla section on apples and pears, but doing most damage to the latter." (Dept. Pl. Path., Sept. 15)

Black end (Non-parasitic)

"This disease, described by Barss in the Third Crop Pest and Horticultural Report pp. 164, has been reported several times from the Yakima Valley. It may occur without leaf injury." (Dept. Pl. Path., Sept. 15)

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